

REMARKS

The Office Action mailed June 13, 2005 has been carefully considered. Within the Office Action, Claims 1-16 have been rejected. Claims 1-4, 7, 10, 13 and 15 have been amended. Reconsideration in view of the above amendments and following remarks is respectfully requested.

The 35 U.S.C. § 112, Second Paragraph Rejection

Claims 1-16 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter that the Applicant regards as the invention. This rejection is respectfully traversed.

In regards to Claims 1-4, 7, 10, 13 and 15, concerning what MIB stands for, it is stated in the present specification that MIB means Management Information Base. Claims 1-4, 7, 10, 13 and 15 have been amended to include the full name of the acronym, MIB. Accordingly, this rejection is overcome.

In regards to Claims 1-3, it is alleged in the Office Action to be unclear how the determination is made that an MIB table is modified. In the present specification, it is stated in an embodiment that one or more devices in the network includes a table modification recorder 16. (Present Specification, Paragraph 18, Lines 1-3). The table modification recorder 16 contains at least a list of which tables have been modified, a timestamp as to when the last modification occurred for a particular table, and a count of the number of modifications that have occurred to that table. (Present Specification, Paragraph 18, Lines 1-3). There is preferably an entry for every registered MIB table that has been modified. (Present Specification, Paragraph 18, Lines 3-4). Thus, when detection of data modification begins, the preferred process generates a list of at least one MIB table that has been modified. (Present Specification,

Paragraph 21, Lines 1-3). Accordingly, Claims 1-3 particularly point out and distinctly claim the subject matter and thereby overcome the rejection.

Regarding the alleged rejection of insufficient antecedent basis in Claim 1 to “the selected table” and “the most recent modification,” the Applicant has amended Claim 1 to recite “selected MIB table” and “a most recent modification,” respectively. Accordingly, amended Claim 1 has proper antecedent basis and overcomes the rejection.

It is alleged in the Office Action that “retrieving a count of the number of modifications that have been performed on the selected table” in Claims 1-3 is unclear, thereby making Claims 1-3 indefinite. It is suggested in the Office Action that appropriate correction is required. The Applicant respectfully traverses.

M.P.E.P. 2173.02 states that definiteness of the clarity and particularity must be analyzed, not in a vacuum, but in light of the disclosure in the patent application as well as claim interpretation that would be given by one skilled in the art at the time the invention was made. M.P.E.P. 2173.02. It is stated in the present specification that the NMS is aware of what the count was the last time that a poll was formed as well as how many times that the count has changed since the last poll. (Present Specification, Paragraph 21, Lines 15-17). Thus, one skilled in the art would appreciate that the count can be the total number and/or the number since the last poll without rendering Claims 1-3 indefinite. M.P.E.P. 2173.04 (breadth of a claim is not equated with indefiniteness under 35 USC 112, 2nd Paragraph). Accordingly, the phrase in question in Claims 1-3 is definite, as is, and therefore overcomes the rejection.

It is stated in the Office Action that it is unclear what “determining whether the count can be resolved” means in Claims 1-3 and appropriate correction is required. The Applicant respectfully traverses.

Among other things, it is stated in the present specification,

Assuming that the timestamp is more recent than the last poll time, at block 40, the count of the number of modifications that have occurred to the selected table is retrieved from the table modification recorder 16 of FIG. 1. At decision block 42, the process determines whether the count can be resolved with the information that is available. The NMS is aware of what the count was the last time that a poll was performed and how many times that it has changed the selected table since then. If the sum of these two values is equal to the count retrieved, then the count can be resolved and the process returns to decision block 30. If the sum of these two values does not equal the count retrieved, then the count can not be resolved and the process continues with block 44. The failure of the count resolution indicates that some source other than the NMS has modified the selected table. As a result, at block 44, the process retrieves the modified rows for the selected table from the row modification recorder 18 of FIG. 1 and continues with decision block 30. Alternatively, the entire table may be retrieved rather than just the modified rows.

(Present Specification, Paragraph 21, Lines 7-23). The specification adequately states what is meant in Claims 1-3. For at least these reasons, Claims 1-3 particularly point out and distinctly claim the subject matter. Accordingly, Claims 1-3 are allowable over the rejection.

In the Office Action, it is alleged that “identifying at least one unregistered MIB table” in Claims 4, 7 and 10 is unclear, and appropriate correction is required. The Applicant respectfully traverses.

It is stated, among other things, in the present specification that the table registrar 12, notification controller 14, table modification recorder 16 and/or row modification recorder 18 contains or is able to access information regarding the MIB tables as well as the data in the MIB tables. (Present Specification, Paragraphs 16-19). This information can be utilized in the system to identify a MIB table or data in the MIB table. In an example discussed in the present specification, the notification controller 14 and/or other components can keep track of whether a

MIB table is unregistered, whereby the notification controller 14 generates notices as prescribed by the NMS. (Present Specification, Paragraph 17, Lines 1-5). As stated in the present specification, the elements of the system are not rigid and can be organized differently. Accordingly, “identifying at least one unregistered MIB table” is adequately explained in the present specification and Claims 4, 7 and 10 particularly point out and distinctly claim this phrase. Therefore, Claims 4, 7, and 10 overcome this rejection.

In the Office Action, it is alleged that “initializing a count” and “initializing a timestamp” in Claims 4, 7, and 10 is unclear, and appropriate correction is required. The Applicant respectfully traverses.

In an embodiment, the process initializes and the count of the number of modifications that have occurred to each table is set to a value of zero and initializes the timestamp as to when the last modification occurred for a particular table to the present time. (Present Specification, Paragraph 20, Lines 14-18). Claims 4, 7 and 10 are directed to initializing the system. Thus, initializing the count of the number of modifications as well as the timestamp are preferred in initializing the system and are functional. Accordingly, the phases in Claims 4, 7, 10 are allowable over the rejection.

In the Office Action, it is alleged that “registering a callback function for each registered table” in Claims 6, 9, 12 and 14 is unclear, and appropriate correction is required. The Applicant respectfully traverses.

As stated above, M.P.E.P. 2173.02 states that definiteness of the clarity and particularity must be analyzed, not in a vacuum, but in light of the disclosure in the patent application as well as claim interpretation that would be given by one skilled in the art at the time the invention was made. M.P.E.P. 2173.02. Upon reviewing the present specification, the meaning of what the phrase in Claims 6, 9, 12 and 14 will be clear and definite although not limited that stated

therein. M.P.E.P. 2173.04 (Breadth of claim is not equated with indefiniteness). Accordingly, Claims 6, 9, 12 and 14 are allowable over the rejection.

In the Office Action, it is alleged that “identifying which tables have been modified” in Claim 15 is unclear, and appropriate correction is required. The Applicant respectfully traverses.

As stated above, M.P.E.P. 2173.02 states that definiteness of the clarity and particularity must be analyzed, not in a vacuum, but in light of the disclosure in the patent application as well as claim interpretation that would be given by one skilled in the art at the time the invention was made. M.P.E.P. 2173.02. Upon reviewing the present specification, the meaning of the phrase in Claim 15 will be clear although not limited that stated therein. M.P.E.P. 2173.04 (Breadth of claim is not equated with indefiniteness). Accordingly, Claim 15 is allowable over the rejection.

Rejections under 35 U.S.C. § 103

Claims 1-3

Claims 1-3 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent Number 6,052,724 to Willie (hereinafter “Willie”) in view of U.S. Patent Number 6,278,694 to Wolf (hereinafter “Wolf”). This rejection is respectfully traversed.

Specifically, it is allegedly in the Office Action that Willie discloses selecting a MIB table that has been modified and determining whether the most recent modification is more recent than a recorded time indicating the last time that a poll was performed. It is alleged in the Office Action that Wolf teaches a method of collecting and reporting monitoring data in which a network manager polls remote probes and receives messages containing counter values. It is alleged in the Office Action that it would be obvious to one having ordinary skill in the art to incorporate the network monitoring of Wolf into Willie to calculate modification of data observed by the network manager and combining data with the modification made by the

network manager to obtain a complete set of modifications over sampling times. The Applicant respectfully disagrees for the reasons set forth below.

The invention is directed to a method and apparatus for detecting data modifications in MIB tables. As stated in the Background of the present specification, when a prior art management application in a Network Management System (NMS) queries a MIB table, the entire contents of the MIB table are transmitted from the agent to the NMS. (Present Specification, Paragraph 3, Line 1-2). If the MIB table is large and the changes since the last poll are few, then this process is inefficient, because the entire contents of the MIB table are transferred, thereby taking up valuable bandwidth.

The invention overcomes this problem by utilizing a network device which includes a table registrar, a notification controller, a table modification recorder and a row modification recorder. The invention registers a MIB table to be monitored by a Network Management System (NMS) with the table registrar and enables the notification controller when observation of change notifications is desired. With the assistance of a modification count and a timestamp from the table modification recorder, the NMS can determine in an amendment whether one or more modified rows should be retrieved from the row modification recorder to find data that has been modified since the last poll.

In contrast, Willie discloses a system which manages a distributed directory service, whereby a plurality of objects are defined, one of those objects being a MIB table. The MIB table in Willie maintains information about partitions and replicas on the managed server, whereby the partitions are disclosed as divided portions of the distributed directory. Willie also discloses that the directory service can maintain an event system which communicates events which occur in the directory service to the network manager. However, there is no hint, teaching or suggestion in Willie that the modifications to a MIB table are communicated to the NMS.

In regards to Claims 1-3, it is alleged within the Office Action that Willie discloses, in Column 8, Lines 35-41, determining whether a modification is more recent than a recorded time indicated in the last time that a poll was performed. The Applicant respectfully disagrees.

In Column 8, Lines 35-41 in Willie, it is disclosed that when an event occurs in an object, a corresponding trap is generated which is either spontaneously communicated to the management station 80 or stored to await polling from the station 80. In other words, when an event occurs in the system in Willie, the trap is either immediately communicated to the station 80 or is stored and communicated to the station 80 when the station 80 conducts a polling query. However, in an example where there are multiple events which occur and are stored before a polling query is performed, the Willie system would not be able to determine which event occurred most recently. Thus, the system in Willie fails to hint, teach, or suggest a management station 80 or other element which determines whether a modification is more recent than a recorded time indicating the last time a poll was performed. Accordingly, there would be no motivation to one skilled in the art, upon viewing Willie, to use Willie alone, or in combination with another reference to reach the invention(s) in Claims 1-3.

Regarding the system in Wolf, Wolf discloses sampling data at each of a plurality of remote probes P1-P3 to monitor the amount of traffic through a network. Such monitoring is done by periodically polling the remote probes, whereby the network manager 20 receives monitoring data for one sampling time during each poll. The monitoring data can include counter values, wherein the counter values increase in response to a new network communication. The manager in Wolf determines the amount of traffic for each sampling interval by subtracting counter values of the immediately preceding sampling time from the counter values of the present sampling time. From these subtractions, the network manager 20 generates traffic data between the remote probes.

However, in contrast to the invention(s) in Claims 1-3, Wolf does not teach retrieving a count of the number of modifications that have been performed on the selected MIB table when the most recent modification is more recent. Instead, the system in Wolf continually samples the probes and subtracts the counter values. This continuous polling and subtracting results in the Wolf system having to collect all the data between the polls and comparing the data to determine what has been modified. For at least these reasons, one would have no motivation to utilize Wolf individually or in combination with another reference to reach the invention(s) in Claims 1-3.

In addition, there is no hint, teaching or suggestion in Wolf in determining whether to resolve the count and retrieving at least one modified row for the selected table when the count can not be resolved. As stated above, the present specification discusses that the NMS is aware of what the count was the last time that a poll was performed and how many times that it has changed the selected table since then. If the count cannot be resolved, this failure indicates that some source other than the NMS has modified the selected table, thereby the modified row(s) is retrieved in an embodiment from the row modification recorder 18. (Present specification, Paragraph 21, Lines 14-24). This is not taught in Wolf, nor would Wolf have any reason to teach resolving the count, because the system in Wolf merely monitors network traffic. For at least these reasons, one would have no motivation to utilize Wolf individually or in combination with another reference to reach the invention(s) in Claims 1-3.

Furthermore, one skilled in the art would find no motivation to combine Wolf and Willie to reach the invention in Claims 1-3, because Willie and Wolf teach away from one another. Willie expressly discloses that the system's ability to generate and communicate a trap associated with the occurrence of an event in the directory service is such that the directory service does not need to be continually monitored. (Willie, Col. 4, Lines 20-25). However, as previously mentioned, Wolf expressly discloses that the probes continually collect data in the counters

which are periodically sampled. (Wolf, Col. 3, Lines 46-48). Therefore, one skilled in the art would have no motivation to combine Willie and Wolf to reach the present invention. For at least these reasons, Claims 1-3 are patentable over Willie and Wolf, individually or in combination.

Claims 4, 7, 10, 13 and 15

Claims 4, 7, 10, 13 and 15 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Willie in view of Wolf. This rejection is respectfully traversed.

In the Office Action, it is admitted that Willie does not disclose initializing a timestamp as to when a last modification was performed on the identified table. However, it is alleged in the Office Action that Wolf discloses a method of collecting network data over sampling times, and one skilled in the art would find it obvious to incorporate the network monitoring of Wolf into Willie to reach the claimed invention. The Applicant respectfully disagrees.

There is no hint, teaching or suggestion in Wolf to initialize a timestamp as to when a last modification was performed on the identified table. As stated above, the system in Wolf periodically polls the remote probes over a sampling time, whereby the system obtains network traffic information for each sampling interval by comparing the differences in the traffic data between a preceding sampling time and the present sampling time. Considering that the remote probes in Wolf continually collect data in counters and increase the counter values, one skilled in the art would find no motivation to initialize a timestamp as to when a last modification was performed. Further, Wolf expressly discloses that the probes have non-decreasing counters for accumulating monitoring data. (Wolf, Col. 4, Lines 24-25). For at least these reasons, there is no motivation to one skilled in the art to incorporate Wolf into Willie to reach the invention(s) in

Claims 4, 7 and 10. Accordingly, Claims 4, 7, and 10 are patentable over Willie and Wolf, individually or in combination.

Regarding Claim 13, the claim recites a table registrar, notification controller, table modification recorder and row modification recorder. In addition, Claim 13 recites that the row modification recorder for identifying which rows of a registered table have been modified, for identifying the type of modification, and for maintaining a copy of the row as modified. The Office action does not provide a specific reference in Willie nor Wolf where such elements and limitations are found. Instead, the Office Action merely contends that one of ordinary skill in the art would have found it obvious to incorporate Wolf into Willie to arrive at the invention in Claim 13. The Applicant assumes that the Office Action intends to take official notice of facts that the rationale supporting the obviousness rejection is based on common knowledge in the art or "well-known" prior art. See M.P.E.P. 2144.03. ("[i]f the applicant traverses such an assertion the examiner should cite a reference in support of his or her position.") Accordingly, the Applicant hereby respectfully traverses the assertion and requests that a reference be cited in support of the position outlined in the Office Action in regards to Claim 13. Nonetheless, neither Wolf nor Willie disclose such elements and/or limitations and do not provide motivation to combine to reach the invention in Claim 13. For at least the reasons, Claim 13 is patentable over Willie and Wolf, individually or in combination, and is in a condition for allowance.

In regards to Claim 15, Claim 15 recites means for identifying which rows of a registered table have been modified, means for identifying a type of modification, and means for maintaining a copy of the row as modified, among other elements. As with Claim 13 discussed above, the Applicant assumes that the Office Action asserts to take official notice of the facts and hereby respectfully traverses the assertion as well as requests that a reference be cited in support

of the position outlined in the Office Action in regards to Claim 15 in accordance with M.P.E.P. 2144.03. Nonetheless, neither Wolf nor Willie disclose such elements and/or limitations and do not provide motivation to combine to reach the invention in Claim 15. For at least the reasons stated herein, Claim 15 is patentable over Willie and Wolf, individually or in combination, and is therefore in a condition for allowance.

Claims 5, 6, 8, 9, 11, 12, 14, and 16

As to dependent claims 5, 6, 8, 9, 11, 12, 14, and 16, these claims are dependent on independent Claims, 4, 7, 10, 13 and 15. As stated above, Claims 4, 7, 10, 13 and 15 are allowable over Willie and Wolf. Thus, Claims 5, 6, 8, 9, 11, 12, 14, and 16 are allowable for being dependent on allowable base claims. For at least these reasons, Claims 5, 6, 8, 9, 11, 12, 14, and 16 are in a condition for allowance.

Conclusion


It is believed that the amendments and remarks place the above-identified patent application into condition for allowance. Early favorable consideration of this Amendment is earnestly solicited. If, in the opinion of the Examiner, an interview would expedite the prosecution of this application, the Examiner is invited to call the undersigned attorney at the number indicated below.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Please charge any additional required fee or credit any overpayment not otherwise paid or credited to our deposit account No. 50-1698.

Respectfully submitted,

THELEN REID & PRIEST, LLP



Dated: September 13, 2005

David B. Ritchie
Reg. No. 31,562

Thelen Reid & Priest LLP
P.O. Box 640640
San Jose, CA 95164-0640
Tel. (408) 292-5800
Fax. (408) 287-8040